

Town of Newcastle

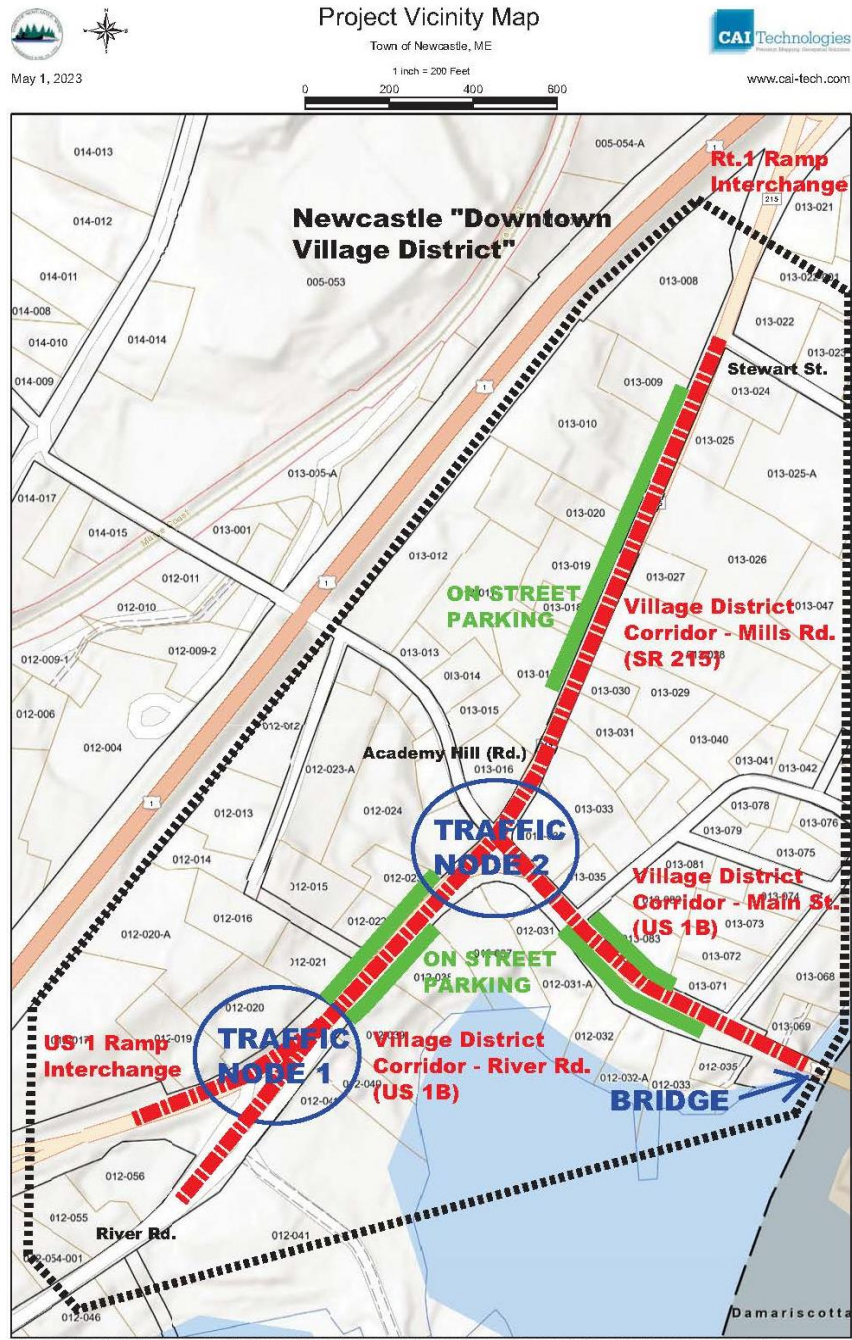
Main Street Pre-Engineering Services

Scope of Work

October 23, 2023

Introduction

The municipality of Newcastle in collaboration with the Maine Department of Transportation (MaineDOT) pursuant to a Village Partnership Initiative (VPI) agreement is soliciting proposals to reconfigure two central traffic nodes and the connecting vehicle corridors to better organize and calm traffic flow, support a pedestrian-friendly village district, and add on-street parking to encourage commercial and residential development in the study area depicted below:



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The Town of Newcastle proposes a study that will focus on the street network in the community's downtown village. The result of the study is expected to benefit the Town with the following three possibilities:

- 1) It can serve as base information for future road and infrastructure improvements.
- 2) It can serve as a visionary guide to attract private development in the district where residential infill construction is desperately needed.
- 3) The Town can use the study to seek additional grant funding and assess the implementation of incentives, such as a TIF district.

The study shall support transportation planning as it has been designated in the Town's Comprehensive Plan. A decade ago, the town engaged in a rigorous community outreach process to broadly reassess land use. A Local Planning Committee was formed, and the town invested in hiring an outside planning consulting firm. This work led to the adoption of a new, visionary Comprehensive Plan and a complimentary Core Zoning Code that best represents the future of Newcastle. During this process, the town residents identified the desire to create a pedestrian-friendly downtown district and for it to be an extension of the neighboring Damariscotta Village District along the Business Rt.1/Main Street transportation corridor. To this end, the town has identified three needs that must be addressed for a pedestrian-friendly district to flourish, they are:

- 1) the need to calm traffic as it is delivered to and from US Rt.1,
- 2) the need to address two problematic intersection nodes that are the cause of driver confusion,
- 3) and the need for on-street parking that supports growing commerce in the downtown village, including restaurants, retail, mixed use, and residential infill development.

Summary for Pre-Engineering Services:

Reconfigure two Traffic Nodes to better organize and calm traffic flow on adjacent corridors; support a pedestrian-friendly mixed-modal village district of mixed-use zoning; and improve the downtown streetscape while adding on-street parking to encourage local commerce and residential development.

Project Location and Proposed Improvements:

1. Main Street (US 1B) from Traffic Node 1 to Traffic Node 2
 - Add on-street parking to Main St. where State R.O.W. easement allows.
 - Modify sidewalks and make crosswalk improvements.
2. Main Street (US 1B) from Traffic Node 2 to Damariscotta River Bridge
 - Add on-street parking to Main St. where State R.O.W. easement allows.
 - Modify sidewalks and make crosswalk improvements.
3. Mills Rd. (SR 215) from Traffic Node 2 to Stewart Street
 - Add on-street parking on Mills Rd. where State R.O.W. easement allows.
 - Modify sidewalks and make crosswalk improvements.
4. Traffic Node 1 (intersection of River Rd, Barroll Pt Rd, and US 1B/Main Street)
 - Redesign intersection, which currently encourages high speeds and creates a confusing, problematic, and inhospitable intersection and adjacent area.

- Assess different redesign solutions, including a roundabout (center drive-over), to reduce vehicle speed, calm traffic, and ease intersection navigation for traffic entering and exiting the downtown village area.
- Create a gateway to the downtown Newcastle and Damariscotta 'Twin Village' area.
- Take advantage of and complement the scenic view of the river and historic village area in Damariscotta.

5. Traffic Node 2

- Modify or redesign confusing, and inhospitable intersection which currently lacks adequate pedestrian accommodations, disrupts the flow of local traffic, and discourages development of adjacent land.
- Assess different redesign solutions, including a four-way stop with US 1B northbound slip lane, to calm traffic, limit vehicle speed, and create/reconnect a hospitable pedestrian network within the downtown village area.
- Improve streetscape to accommodate and encourage traditional village development in the downtown area.

Task 1 – Project Kick-Off Meeting

The consultant will meet with representatives from the municipality of Newcastle and MaineDOT under a collaborative planning process. At a minimum, the kick-off meeting should accomplish the following:

- Identify and understand local issues
- Identify and understand relevant state and federal regulatory requirements
- Finalize the scope of work
- Identify previous related study efforts
- Identify available traffic data and the additional data that will need to be collected.
- Identify baseline environmental data to be collected
- Draft a preliminary study purpose and need

Task 2 – Review Available Data

The consultant team will review available information provided by the municipality of Newcastle and MaineDOT. These will include, but not be limited to, the following:

- Local Comprehensive Plan,
- Recent MaineDOT traffic counts and crash summaries for the Study Area
- Available land use and economic development information that could affect transportation in the study area provided by the municipality Newcastle.
- Other relevant reports, studies, and policies.
- StreetLight origin-destination traffic data if applicable.
- desktop screening of environmental conditions to identify known environmental resources in the study area

Task 3 – Collect Additional Data if necessary, based on Task 1

As part of Task 1 and Task 2, the Consultant Team and the Project Manager will identify additional data to be collected. At a minimum, the data need collection tasks anticipated are:

- Collect traffic volume and turning movement counts as required including
- Collect Environmental Baseline Conditions
- Conduct a parking study to review local parking policies, inventory parking supply, identify shortages or surpluses, and estimate future parking demand.
- Coordinate a Road Safety Audit.
- Conduct a Speed Study or Speed-Delay Study.

Task 4 – Assessment of Current Conditions

The consultant team will evaluate the existing and recent historic performance of traffic in the study area based on traditional forecasting and growth models. The assessment will include but not be limited to:

- Transportation Operation Analysis. Existing safety and transportation deficiencies as well as the impacts on traffic associated with growth and future year traffic will be assessed.
- Safety Assessment. The consultant will analyze the three most recent years of crash records to identify High Crash Locations and other locations that have high crash frequencies.
- Bicycle, pedestrian, and ADA Analysis. The consultant will analyze the bicycle and pedestrian infrastructure within the study area to identify gaps in the infrastructure and barriers to person with disabilities
- Review analyses with team members and discuss possible recommendations and additional alternatives to be considered.

Task 5 – Assessment of Future Conditions

The consultant team will evaluate future traffic volume based on traditional growth forecasts and considering anticipated development and land use changes underway. It will include:

- A 2045 forecast of traffic volumes in the study area, based on historical traffic data and available MaineDOT traffic forecasts
- Analysis of future traffic volume conditions of the study area. Analysis of alternatives under future existing conditions to prevent or minimize loss of service. The analysis will include predicted changes in mobility and safety.
- Analysis of existing and recommended access management
- Review of possible changes to the lane configuration without widening the roadway
- Analysis of the impacts associated with the construction of frontage roads and additions to the roadway grid

- Review of possible traffic signal modifications and implementation of traffic demand management
- Analysis of impacts to bicycle and pedestrian facilities
- Review analyses with team members and discuss possible recommendations and additional alternatives to be considered

Task 6 Develop Preliminary Recommendations

Based on the analysis of alternatives determined in Task 5, the consultants will develop recommendations based on effectiveness of meeting the study area transportation needs. These recommendations may include low-cost improvements, a recommended roadway cross-section or cross-sections to improve the consistency of the study area corridor for its users, and other roadside or off-road improvement recommendations.

- Develop recommendations based on effectiveness and viability from a regulatory perspective. In some efforts based on budget, prior studies, municipal priorities, a consultant may be asked to consider a set number of recommendations, including a specific alternative and low cost/ non-capital alternatives.
- Measurements for effectiveness will include benefits to mobility and safety, cost and practicality of implementation, and ability to meet the purpose and need.
- The recommendations will include a discussion of the potential and degree of effort associated with environmental analysis, secondary, cumulative impacts, etc., including anticipated future costs of remaining planning, design and construction phases.
- Develop cost estimates for recommendations (including construction and potential right-of-way costs).
- Develop a recommendation for phasing of implementation.
- Develop a draft report containing the analysis of existing and future conditions, alternatives analysis, and recommendations, including a matrix summarizing recommendations along with an appendix of traffic and crash data.
- Develop basic conceptual renderings of recommended alternatives on aerial photography.

Task 6 Public and Agency Feedback

The consultant team should expect to meet with the study team including representatives from the municipality of Newcastle and MaineDOT up to 10 times including Task 1. The consultant team's proposal should include an approach to effectively inform and solicit feedback from the public and other stakeholders. Most VPI's include 3-5 study team meetings and at least 2-3 public meetings one of which may be a standing Board of Selectman Meeting.

Task 7 – Final Report

The Tasks discussed above will be combined into a final narrative report documenting the project. At a minimum the report will include a narrative of the study process, a description of the various alternatives considered, documentation of the evaluation criteria, and illustrations of conceptual designs and cross sections for the preferred alternative. The final report will incorporate all applicable technical memorandums.

Standards to be used in Proposals for the Town of Newcastle Transportation Study

Any Transportation improvements in the Town of Newcastle would need to meet the following conditions:

1. All design features must reflect MaineDOT design guidance for Highway Corridor Priorities (HCPs) and must be consistent with the MaineDOT Highway Design Guide and the MaineDOT Bridge Design Guide.
2. All capacity, queuing, and level-of-service analyses will be done in accordance with the 2010 Highway Capacity Manual (HCM) methodologies.
3. Signalized and stop sign controlled intersections will be modeled using the latest version of Synchro/SimTraffic. Computer modeling showing impacts of queuing and level of service will be provided to MaineDOT. The design hour volumes will be based on estimated 30th highest hourly volumes for the design year.
4. Design year traffic estimates will be 2045.
5. Design speed – match existing posted speed,
6. Safety analysis of any proposed design will include an inventory of existing crashes, a prediction of crashes with the proposed design, and a comparative evaluation. Crash analysis will be based on the most recent five years of data available from MaineDOT. Safety analysis will generally follow Highway Safety Manual methodologies.
7. Drainage – needs to match into surrounding drainage structures.
8. Signing shall be in accordance with MUTCD (including potential changes to existing overhead signage in the area)
9. Any proposed lighting shall meet minimum AASHTO light levels
10. The Design Vehicle for the major intersections shall be a WB-67, all other intersection shall be for a bus/fire truck unless otherwise specified.
11. Any new traffic signal recommendations must be accompanied by a warrant analysis justifying the recommendation.